

The Amorium Project: Excavation and Research in 2003

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THE SIXTEENTH CAMPAIGN of work at Amorium took place between 30 June and 12 August, with almost perfect summer weather throughout.¹ The team comprised twenty-four archaeologists, conservators, and students from seven different countries, assisted by a workforce of twenty-two local men.² Heavy earth-moving equipment was also provided by the mayor of Emirdağ to assist with the removal of spoil heaps from the site. Excavation focused on the Lower City Enclosure area (figs. 1 and 2), where preliminary sondages were first dug in 1996 and a geophysical survey was carried out in 1997.³ Work began there in earnest in 1998 and continued in the 2000–2002 seasons.⁴ The present campaign was intended as the final year of a five-year plan, but recent results have encouraged us to expand the excavations further in the Enclosure.⁵ At the Lower City Church, where excavation ceased in 2002, the program of conservation was carried forward with increased vigor and resulted in progress that went well beyond expectations. With the successful completion of two volumes of final reports during 2002–3,⁶ work at the Dig House concentrated on the study of other groups of finds, notably the metalwork, bone objects, terracottas, lamps, coins, and

¹ For other preliminary reports on the season, see C. S. Lightfoot, "Amorium 2003," *AnatArch* 9 (2003): 18–19; C. Lightfoot, O. Koçyiğit, and H. Yaman, "Amorium Kazıları 2003," 26. *KazSonTop* 24–28 Mayıs 2004, *Konya* (Ankara, 2005), 1: 249–64. For the first, preliminary publication of an inscription, found at Pessinus in 2003, that refers to "colonists from Amorium," see J. Devreker, L. Bauters, W. de Clercq, W. Dhaeze, K. Braeckman, and P. Monsieur, "Fouilles archéologiques de Pessinonte: La campagne de 2003," in *ibid.*, 1: 89. The inscription is a letter of King Attalus II of Pergamum, dated to the second quarter of the 2nd century BC, making it the earliest historical document yet known to mention Amorium; it clearly indicates that the city was already a place of some importance.

² The team members were Chris Lightfoot (director, The Metropolitan Museum of Art, New York), Yoav Arbel (archaeologist, University of California,

San Diego), Berrin Altaş (illustrator), Tuğrul Çakar (photographer), Ekaterina Churakova (conservator, Moscow), Jane Foley (conservator, London), Dr. Olga Karagiorgou (Byzantine archaeologist, Athens and Munich), Serhat Karakaya (conservator, Ankara), Yrd. Doç. Dr. Ergün Lafli (ceramicist, Dokuz Eylül University, Izmir), Mücahide Lightfoot (art historian, N. Bergen, N. J.), Petra Linscheid (textile expert, Berlin University), Inez Litas (conservator, Chicago), Dr. Paola Pugsley (archaeologist and illustrator, Durham, England), Vicky Sears (archaeologist, London), and Dr. Johanna Witte-Orr (Byzantine art historian, Farmington, Iowa), together with students Oğuz Koçyiğit, Hüseyin Yaman, Uğur Akabak, Murat Şen, and Aslıhan Karagöz (Onsekiz Mart University, Çanakkale), Seher Bayram (Kütahya Dumlupınar University), İbrahim Koçak (Yıldız Teknik University, Istanbul), Talat Koçak and Sedat Oktay (Kocatepe University, Afyonkarahisar).

³ *DOP* 52 (1998): 327–28, figs. A–D and 9–14; *DOP* 53 (1999): 334–37, figs. A–F.

⁴ *DOP* 55 (2001): 381–94, figs. H–I and 13–20; *DOP* 57 (2003): 288–92, figs. B and 13, 15–19; *DOP* 58 (2004): 356–63, figs. A–C and 1–11; *DOP* 59 (2005): 233–41, figs. 1–3.

⁵ For brief reports on work in the Enclosure in subsequent seasons, see C. Lightfoot, "Amorium 2004," *AnatArch* 10 (2004): 13; C. Lightfoot, O. Koçyiğit, and H. Yaman, "Amorium Kazısı, 2004," 27. *KazSonTop*, 30 Mayıs–3 Haziran 2005, *Antalya* (Ankara, 2006), 1: 77–80, figs. 1–6; C. Lightfoot, "Amorium 2005," *AnatArch* 11 (2005): 31–32; C. Lightfoot and E. Ivison, "Amorium 2006," *AnatArch* 12 (2006): 29–30; B. Yıldırım and M. H. Gates, "Archaeology in Turkey 2004–2005," *AJA* 111 (2007): 335–36.

⁶ M. A. V. Gill (with contributions by C. S. Lightfoot, E. A. Ivison, and M. T. Wypyski), *Amorium Reports, Finds I: The Glass (1987–1997)* (Oxford, 2002); C. S. Lightfoot, ed., *Amorium Reports II: Research Papers and Technical Studies* (Oxford, 2003).



brick and tile, for publication in further volumes of the Amorium monograph series.⁷ In addition, the recording, processing, and conservation of material excavated during the season were carried out by various specialists on the team. Some of the most notable of the 2003 finds are included in this preliminary report. However, the intention here is to give not a complete description of the season's excavations but rather a summary of some of the discoveries that were made. A comprehensive account of the work in the Lower City Enclosure must await a full analysis of the finds and a more general interpretation of the various buildings, occupation layers, and contexts that were uncovered.⁸

The Lower City Enclosure, Trench XC

Excavations were carried out to either side of the bathhouse, continuing and expanding the trenches that were started in 2001 and 2002 (fig. 3).⁹ In addition, a small area that had not been completely exposed in the southern corner of the bathhouse was excavated to allow for the drawing of plans of the entire hypocaust and underlying tile floor in both the *caldarium* and the *tepidarium*. The roof

Fig. 1 General view of the Enclosure Area in the Lower City, looking south. Photo by C. Lightfoot.

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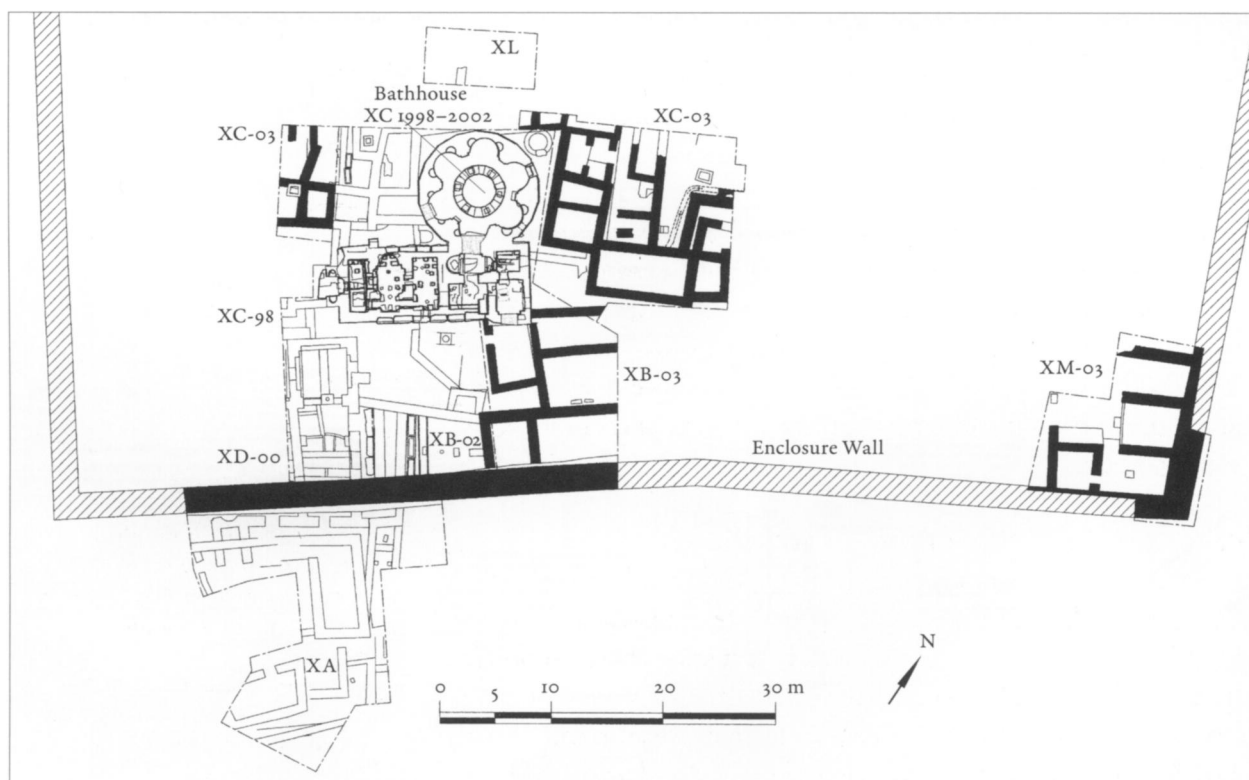
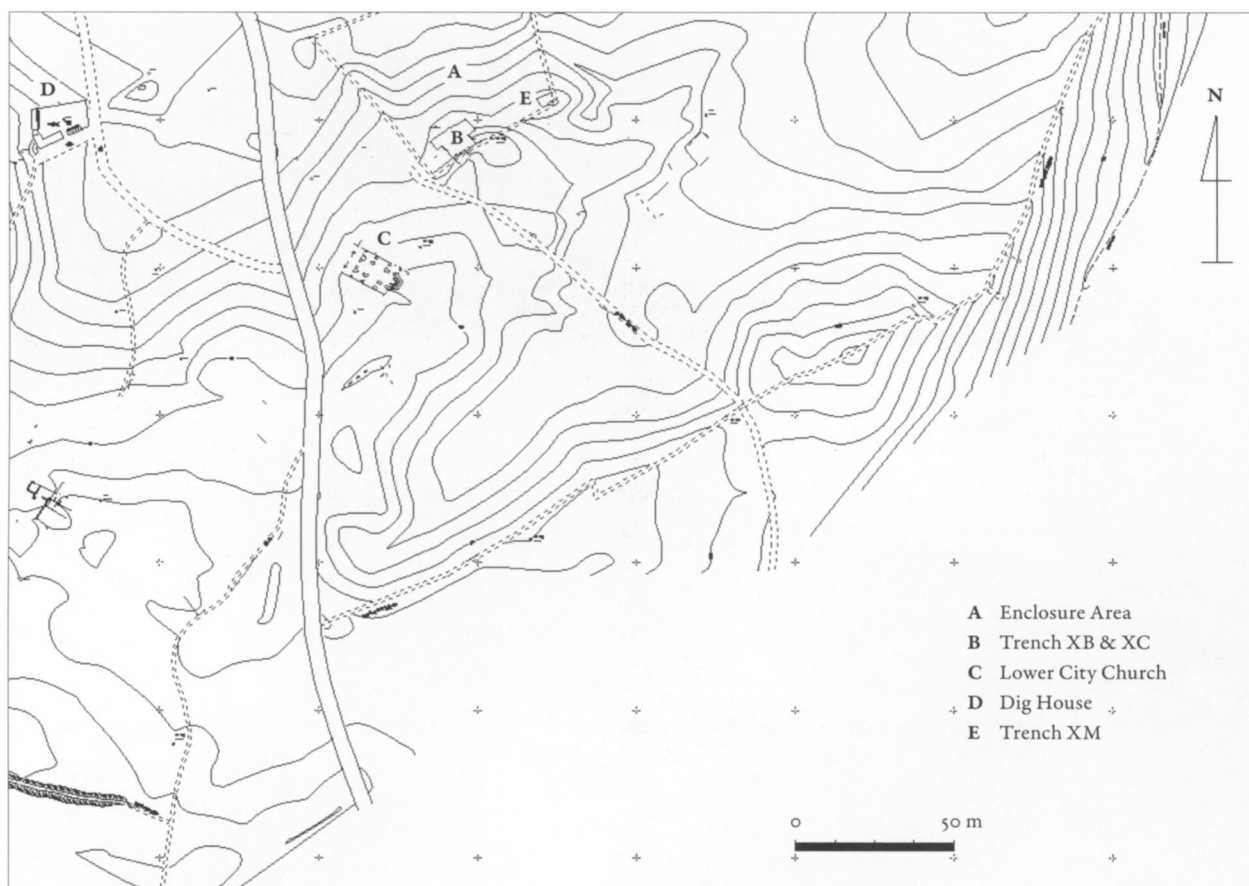
Fig. 2 Grid plan of south-east quadrant of the site. Drawing by S. Aydal.

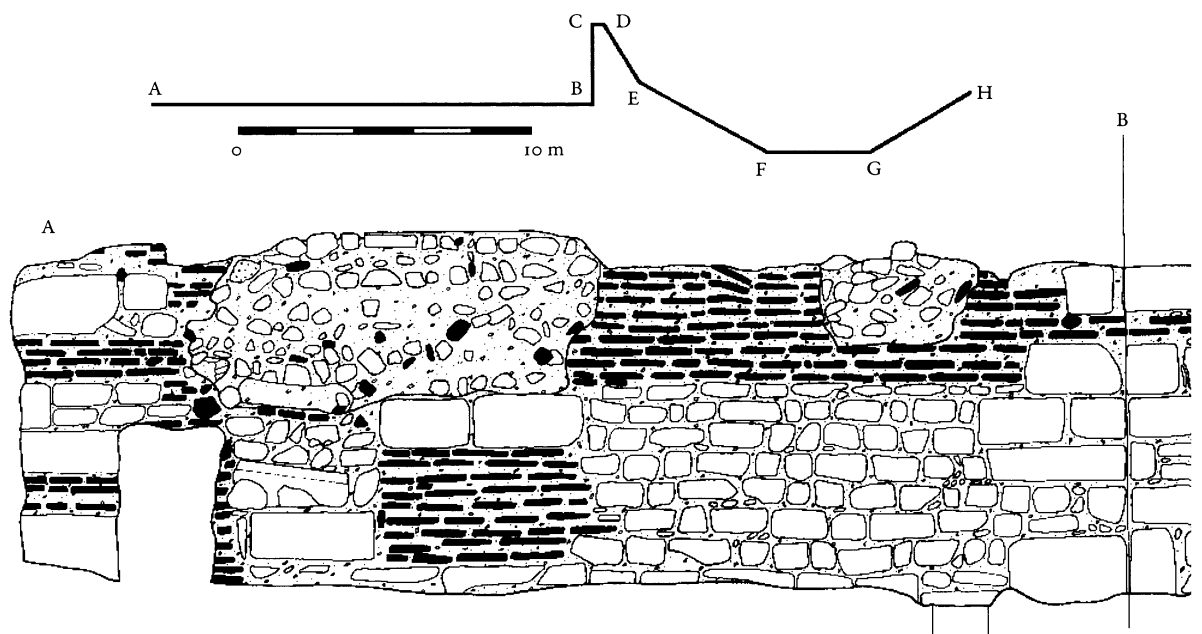
Fig. 3 Plan of excavated areas in the Enclosure. Drawing by B. Arubas.

⁷ Results from some of this work appear in *Amorium Reports 3: Finds Reports and Technical Studies*, ed. C. S. Lightfoot and E. A. Ivison (Oxford, forthcoming).

⁸ For an interim report, see E. A. Ivison, "Excavations of the Lower City Enclosure, 1996–2000," in *Amorium Reports 3*, forthcoming.

⁹ The excavation in Trench XC was directed by Yoav Arbel, assisted by Vicky Sears, and with the help of Murat Şen and İbrahim Koçak.





installed over the bathhouse in the previous seasons continues to do an excellent job in protecting the surviving masonry from the ravages of the Anatolian winter (fig. 4). However, a few of the hypocaust *pilae* had suffered some damage since 2002. It was decided, therefore, once they had all been fully documented in situ, to remove those that were more fragile and vulnerable to the Dig House for safekeeping (fig. 5). In conjunction with the drawing plans of details of the interior of the bathhouse, two other projects were carried out in 2003.¹⁰ One was the elevation drawing of the northeast-facing exterior walls of the entire complex (fig. 6), and the other was the study and subsequent reconstruction of marble revetment panels from fragments found both within and outside the bathhouse (see below, p. 366–67).¹¹

10 Some of this work has already been incorporated into the 2002 preliminary report because it was relevant to the description of the bathhouse; see *DOP* 59 (2005): 235–37, figs. 4, 5.

11 The two projects were undertaken by Dr. Paola Pugsley and Dr. Olga Karagiorgou

respectively. Dr. Karagiorgou also carried out the examination and identification of a number of small pieces of imported (mainly Greek) marbles found in the bathhouse. All of this work will be included in the final report on the building, which is now being prepared for publication.

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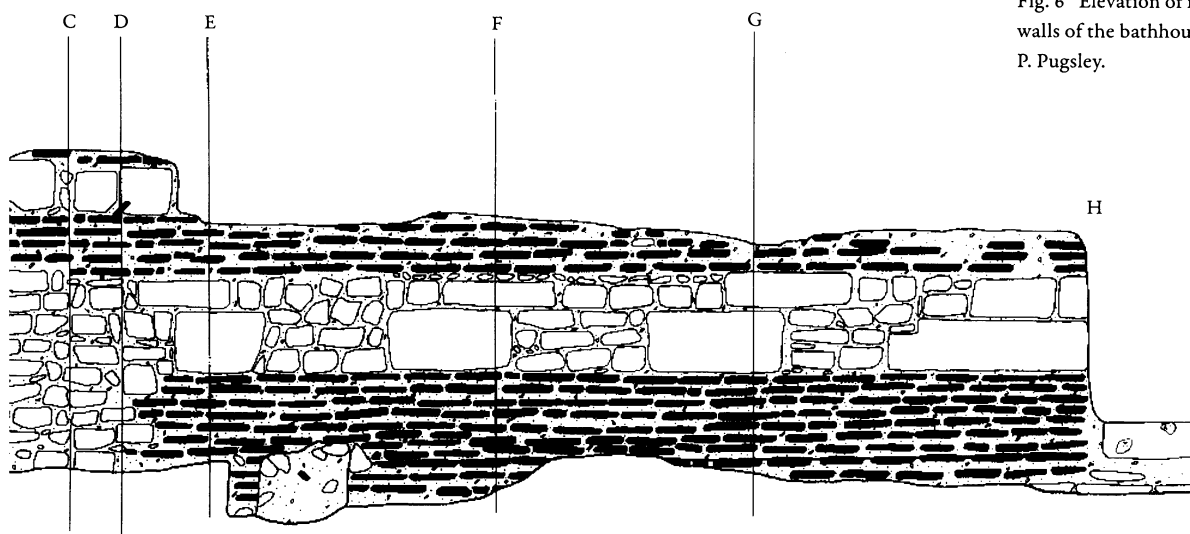
Fig. 4 General view of the protective roofing over the bathhouse, looking north. Photo by C. Lightfoot.

below

Fig. 5 A hypocaust *pila* in the *tepidarium* of the Lower City bathhouse before removal. Photo by C. Lightfoot.



Fig. 6 Elevation of northeast-facing exterior walls of the bathhouse complex. Drawing by P. Pugsley.



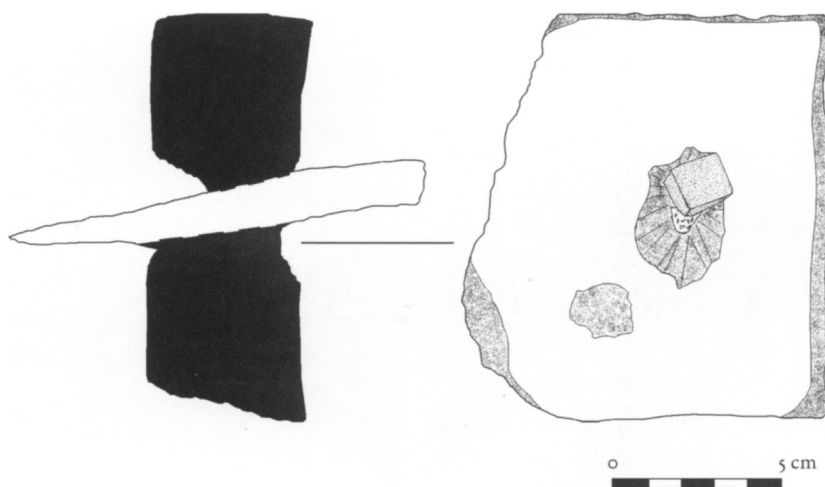


Fig. 7 Brick spacer with iron clamp from Trench XC, Context 325. Drawing by O. Koçyiğit.

The additional work in the bathhouse produced one unexpected but interesting piece of evidence. A number of terracotta “spacers” had been recovered from the ash fill inside the hypocaust of the hot and warm rooms during the 2002 season.¹² This year, during the clearing of the remaining ash in a small recess in the southern corner of the caldarium, several pieces of brick were found. They had been crudely shaped, with a hole pierced through the middle, so that they resembled squared or rounded loom weights. However, when one was found with an iron clamp or spike still attached through its hole, it immediately became obvious that these objects were in fact “spacers,” too (fig. 7). Presumably, therefore, during the repair and refurbishment of the bathhouse that appears to have taken place during the Byzantine dark ages, some of the marble revetment on the interior walls was replaced and new “spacers” were needed. Since proper wheel-made pottery “spacers” were no longer available, it seems that the workmen resorted to using pieces of discarded brick as convenient substitutes.

The excavations in Trench XC both to the west and to the northeast of the bathhouse helped to clarify the stratigraphy, layout, and dating of the various structures that had been exposed in the Enclosure in previous seasons. The area close to the northeast baulk of the new trench (figs. 8 and 9) was particularly fruitful and produced some notable individual finds, including a fine copper-alloy basin (SF5707), the interior of which still retained substantial traces of surface tinning. The vessel is oval in shape, measuring 42.8 by 37.4 cm at the rim, with a hollow splayed foot giving a total height of 17.3 cm (figs. 10 and 11). It is undecorated but has two hinged handles attached to the sides just below the rim, and the splayed foot was filled with lead to weight the basin down and make it more stable. Similar handled basins are known from sites as far away as Britain

¹² DOP 59 (2005): 237 and fig. 6; see also O. Koçyiğit, “Terracotta Spacers from the Bathhouse at Amorium,” *AnatSt* 56 (2006): 113–25.

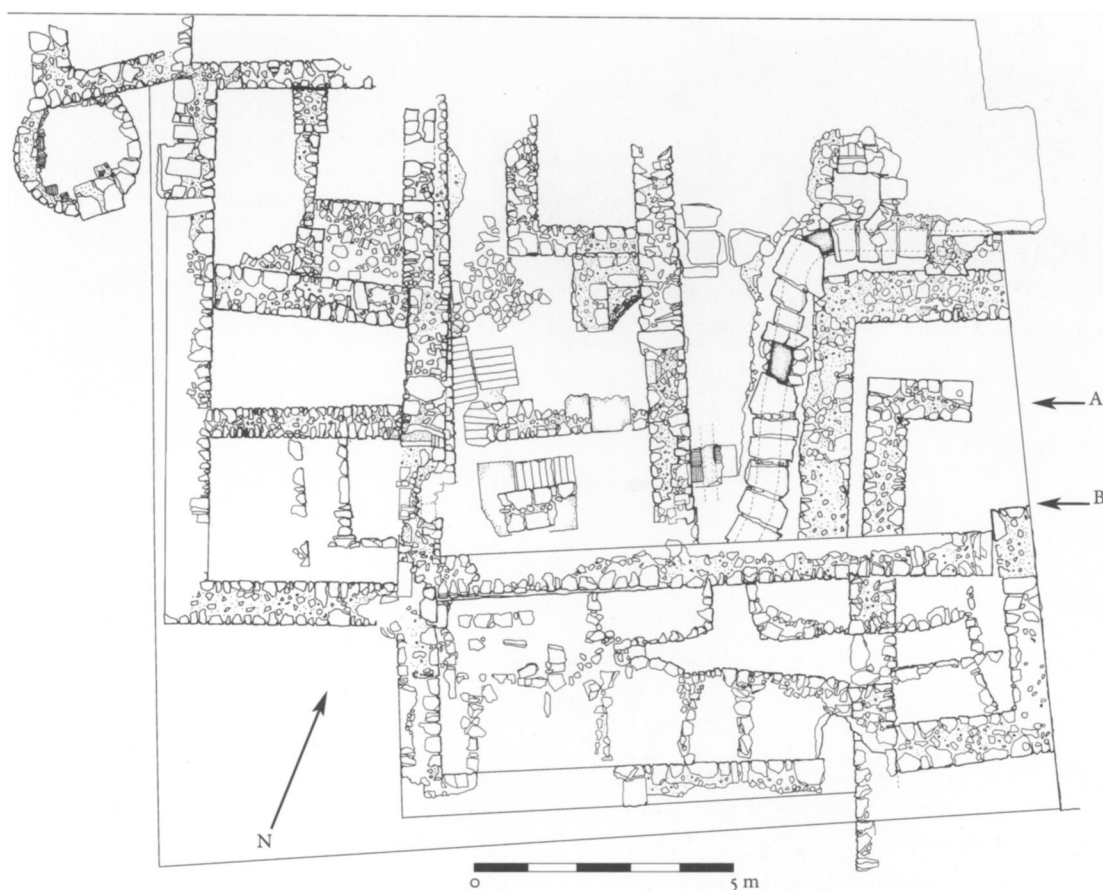


Fig. 8 Plan of Trench XC east of the Bathhouse. Drawing by B. Arubas.

Fig. 9 Section drawing of part of the northeast baulk of Trench XC. Drawing by M. Şen and U. Akabak.

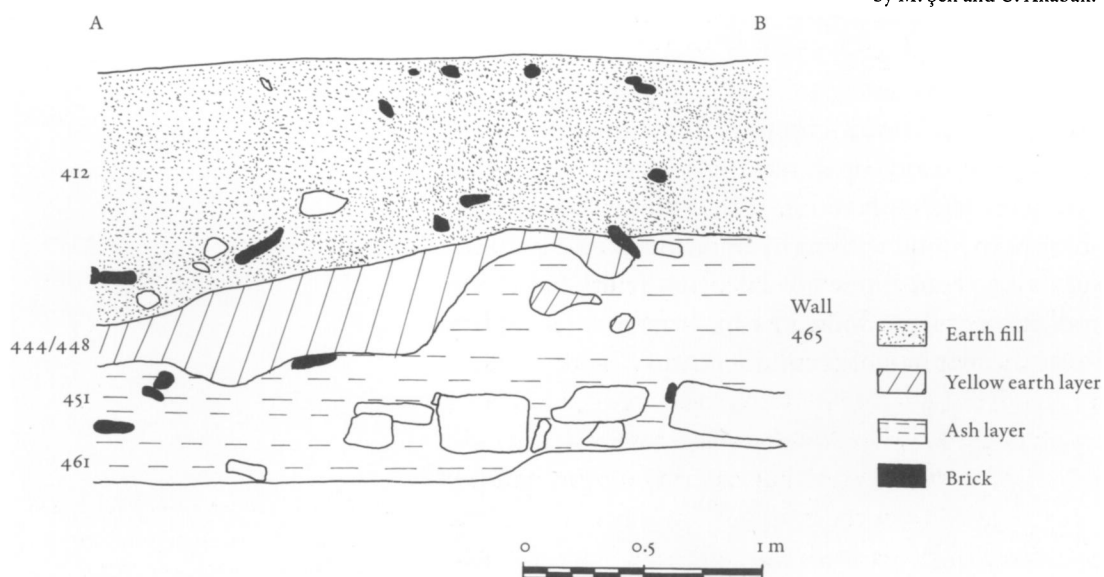
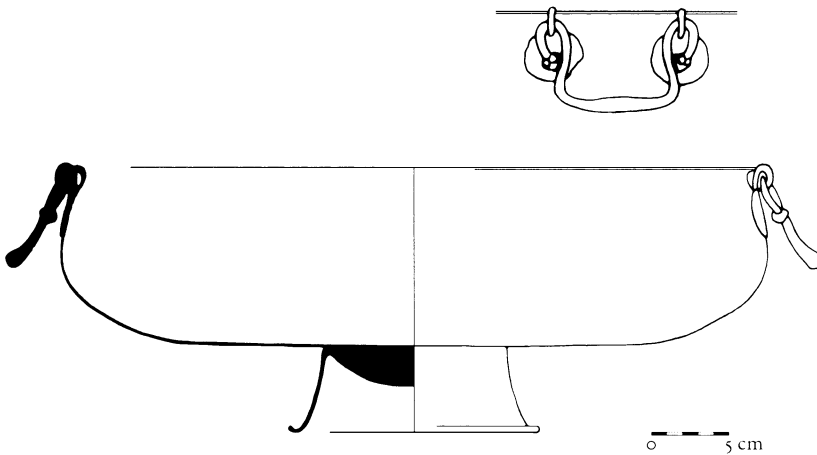




Fig. 10 Copper alloy basin (SF5707)
found in Trench XC, Context 444/448.
Photo by T. Çakar.

Fig. 11 Copper alloy basin (SF5707)
found in Trench XC, Context 444/448.
Drawing by P. Pugsley.



and northwest Europe on the one hand, and Nubia in Africa on the other. They belong to well-known groups of Byzantine metalwork, which were exported and ended up in rich, if not royal burials. They are usually dated to the late sixth and seventh centuries.¹³ Few examples, however, have been found within the empire itself and, as in the case of jugs and flasks, there appears to be a continuity and uniformity in the production of large, footed basins from early Byzantine times until at least the first half of the ninth century.¹⁴

13 M. Mundell Mango, "Beyond the Amphora: Non-Ceramic Evidence for Late Antique Industry and Trade," in *Economy and Exchange in the East Mediterranean during Late Antiquity: Proceedings of a Conference at Somerville*

College, Oxford, 29th May, 1999, ed. S. Kingsley and M. Decker (Oxford, 2001), 89–91, figs. 5.4–5.

14 Mundell Mango, "Beyond the Amphora," 93.



Fig. 12 Destruction layer in Trench XC, Context 444/448, showing the copper alloy basin (SF5707) and one of the iron frames (SF5699) in situ. Photo by C. Lightfoot.

From the same layer and found in close proximity to the basin (fig. 12) came two sets of iron frames (SF5696 and 5699), hinged at the middle so that they could be folded and unfolded.¹⁵ Similar objects, identified as folding stools, have been excavated at Sardis in Byzantine contexts of the early seventh century, as well as in several of the tombs at Ballana in Nubia.¹⁶ At Amorium they were found in association with a number of gaming counters that clearly formed

¹⁵ The first iron frame, SF5696, was found in Context 414, immediately above Context 444/448.

¹⁶ J. C. Waldbaum, *Metalwork from Sardis: The Finds through 1974* (Cambridge, Mass., 1983), 79, nos. 423–24, plates 26–27; W. B. Emery and L. P. Kirwan, *The Royal Tombs of Ballana and Qustul*, 2 vols. (Cairo, 1938), 359–61, nos. 794–801, plate 95.

part of a set of black and white pieces (fig. 13).¹⁷ Finally, a round bronze weight (SF5757) was found in Context 487, farther to the southwest. It is of a standard type, bearing at the center the letters Γ Γ, indicating its weight of three *uncia* (81.11 g), and around the edge is written XA[PIC] ΘEOV, “Grace of God” (fig. 14).¹⁸ Very few discoid weights have been found in such a clear archaeological context at a Byzantine site.¹⁹ Indeed, those with provenances come mainly from Egypt, Israel, Jordan, and Italy, and they belong predominantly to the period between the seventh and the early ninth centuries.²⁰

All of these finds came from layers (Contexts 444/448, 451, and 487) that also included a very large concentration of burned and broken bricks (including mud-bricks) and some roof tiles, together with some sizeable pieces of carbonized wood, possibly fallen from the upper courses of the walls or ceiling (figs. 9 and 12).²¹ No coins were found in these destruction layers to help clarify their date, but it should be noted that other contexts, containing more evidence of ash and debris and found nearer the Enclosure wall in Trench XB, did produce coins of the Amorian emperors Michael II (820–29) and Theophilos (829–42) (see below, pp. 370–71).²² Further work is required, especially in the study of the ceramic material, before it can be positively asserted that the ash and destruction layers found in Trenches XC and XB are related and contemporaneous.²³

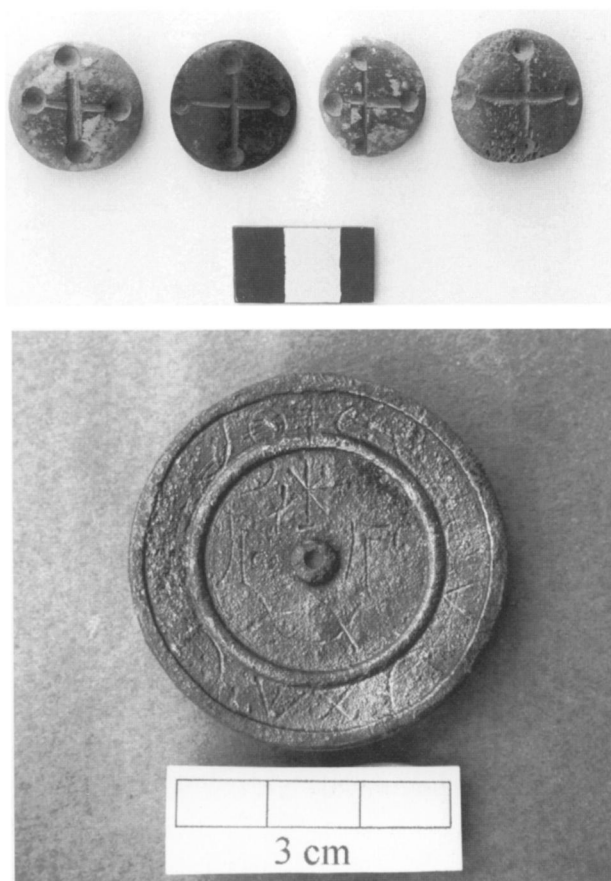


Fig. 13 Bone gaming counters (SF5648A-D) found in the destruction layer in Trench XC, Context 451. Photo by C. Lightfoot.

Fig. 14 Bronze weight (SF5757) found in the destruction layer in Trench XC, Context 487. Photo by C. Lightfoot.

17 Five are made of bone, but one is stone; see J. Witte-Orr, “Toys, Game Pieces, and Boards,” in *Amorium Reports* 3, forthcoming (above, n. 7).

18 C. S. Lightfoot, “Byzantine Weights and Related Material,” in *Amorium Reports* 3, forthcoming.

19 Two similar examples in the British Museum are P&E 1938.10–4.30 from Egypt (weight 80.79 g), and P&E 1980.6–1.53 from the Roper Collection (weight 78.64 g). This information was kindly supplied by Dr. C. J. S. Entwistle. For others, including those found at Corinth, see also G. R. Davidson, *Corinth XII: The Minor Objects* (Princeton, 1952), 210, nos. 1599–

1602, plate 94; D. Buckton, *Byzantium: Treasures of Byzantine Art and Culture from British Collections* (London, 1994), 99–100, no. 108.

20 C. Entwistle, “Byzantine Weights,” in *The Economic History of Byzantium: From the Seventh through the Fifteenth Century*, ed. A. Laiou (Washington, D.C., 2002), 2: 612 (with refs.).

21 Samples of oak and cedar, each containing over 100 tree rings, were subsequently taken by Prof. Peter Kuniholm and his team for dating at the Malcolm and Carolyn Wiener Laboratory for Aegean and Near Eastern Dendrochronology, Cornell University.

22 One of the coins found in this trench, however, has been identified as a copper alloy follis of Theophilos, class 1: AMo3/XC428/SF5594; 28.5–26.1 mm; 6.30 g; -h.

23 The detailed study of the pottery assemblage associated with the burned layers in Trench XB was initiated by Dr. Beate Böhlendorf-Arslan in 2004 and will be extended to include material from the relevant contexts in Trench XC in 2005.

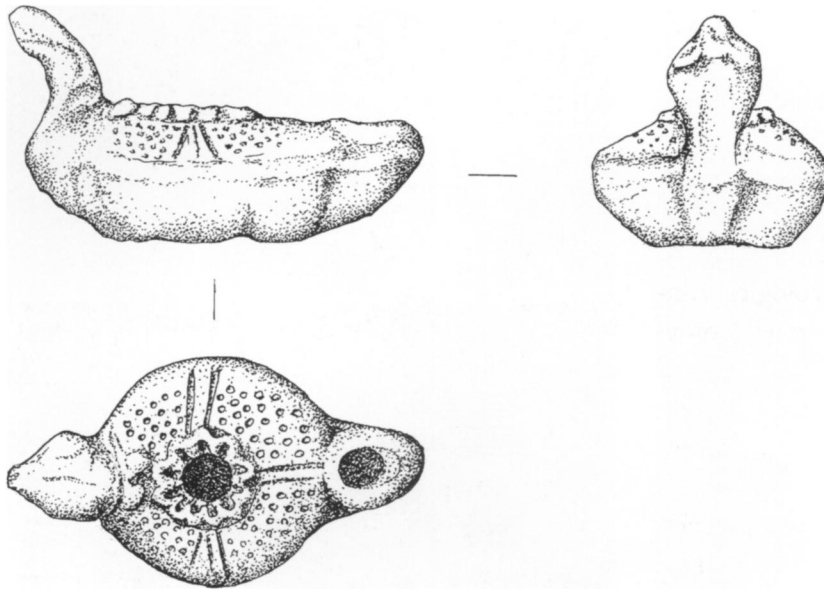


Fig. 15 Terracotta lamp (SF5988, length 8.8 cm) found in Trench XC, Context 537. Drawing by E. Churakova.

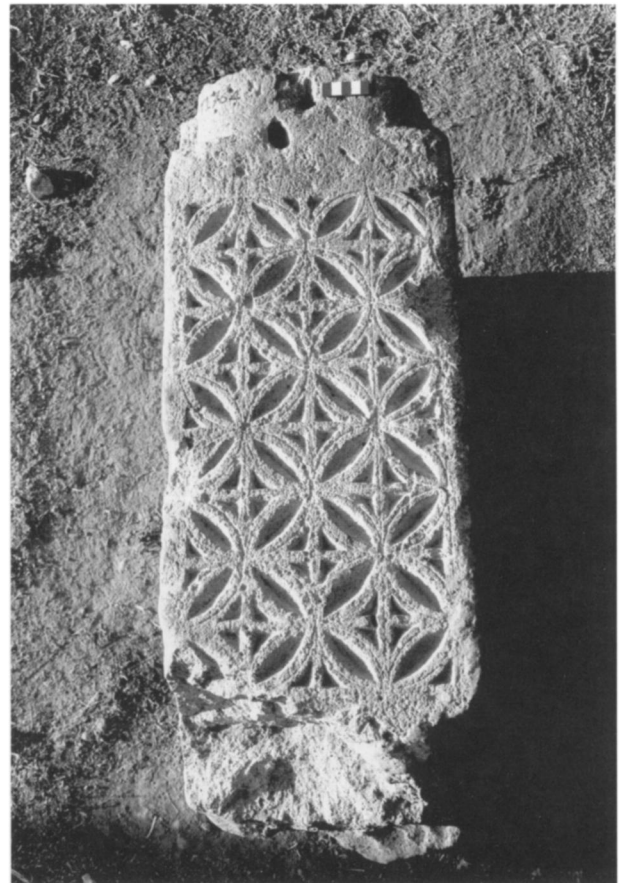
From a deeper layer (Context 537) to the west of the bath-house came the first intact terracotta lamp (SF5988) to be found at Amorium.²⁴ It was mold-made, measuring 8.8 cm in length, with a projecting nozzle, roughly circular body, and a stub handle in the form of a raised palmette (fig. 15). The fabric of the lamp is very poor, with a thin red slip, and so it may be a local imitation of a type exemplified by finds from Ephesus, Sardis, and Knidos, although no close parallel for its design and decoration has yet been found. It probably belongs to the sixth or early seventh century, a dating that would seem to be confirmed by the pottery sherds that were found in association with it. Another interesting find from the western sector of Trench XC in 2003 was an engaged column in brown tufa (T1763a, b, and T1764). Although broken into three sections that were found in a disorderly tumble, the entire length of the column could be reconstructed. At the bottom it has a squared-off base (T1764) decorated at the front with a carved geometric pattern; above the plain rounded shaft (T1763b) comes another squared panel (T1763a) with an architectural design comprising double arches enclosing crosses (figs. 16 and 17).²⁵ A number of similar decorated tufa blocks have previously been noted at Amorium, although no precise dating has been ascribed to them.²⁶ The context of the present find, however,

²⁴ Lightfoot, "Amorium 2003," 19, (above, n. 1).

²⁵ The upper squared section was numbered T1763A, the plain, engaged column drum T1763B, and the base section T1764; all from Trench XC, Context 521; total height 2.55 m.

²⁶ For example, a double column (T114) found in the Lower City Church; see E. A. Hendrix, "Painted Polychromy on Carved Stones from the Lower City Church," in *Amorium Reports* 2, 130, 134, plate IX/5 (above, n. 6), where it was assigned to the 9th–11th centuries. Compare also the

decoration on a tufa tombstone found at Yedikapı, Kemer kaya, some 25 km southwest of Amorium; see S. Şahin and M. Üyümez, "Kemer kaya Yedikapılar Kaya Yerleşimi ve Yeraltı Yerleşimi Temizlik Çalışması," 12. *MüzKazSem*, 25–27 Nisan 2001, *Kuşadası* (Ankara, 2002), 267, plate 15.



suggests that these stones belong earlier than the middle Byzantine period (late ninth–eleventh century). Their precise dating remains under review.

The stratigraphy in both sectors of Trench XC was very complex but, as elsewhere in the Enclosure, there was very little evidence for any Seljuk or Ottoman occupation. By contrast, the excavations showed that during the Byzantine period the layout of the Enclosure area and the use to which it was put changed radically over time. Immediately below the topsoil we encountered occupation layers belonging to the middle Byzantine period (late ninth–eleventh century). The buildings, poorly constructed of small rubble masonry, contained a considerable amount of architectural spolia fragments. The use of the structures remains uncertain, but it would appear from their size and arrangement that they were principally small workshops and storerooms.²⁷ Despite their irregular layout they were built on well-defined, substantial foundations, and so their overall arrangement was not as haphazard as they might appear. The northern part of the eastern sector of Trench XC produced little evidence of any middle Byzantine structures. Here it was possible to excavate down to an earlier stratum, which included the building (Context

Figs. 16–17 Engaged column fragments (T1763A and T1764) found in Trench XC, Context 521. Photo by C. Lightfoot.

²⁷ For a similar collection of small rooms built inside part of the Roman baths at Hierapolis in the “late Byzantine period,” see C. Şimşek, “V. Dönem Hierapolis Roma Hamamı Kazısı,” 8. *MüzKazSem*, 7–9 Nisan 1997, *Kuşadası* (Ankara, 1998), 461–92, esp. 463–64, figs. 1–2.



480) that contained the destruction layer (Context 444/448). Flanking the west side of this structure, a large drain or channel was found running roughly from south to north, following the slope of the terrain (figs. 8 and 18). The channel was stone lined and had capping blocks also of stone. Although no surface was identified as that of a street, the channel probably marks the line of some such open space. In addition to the fact that some of the buildings of this phase, provisionally dated to the first half of the ninth century, were clearly constructed of mud-brick on stone foundations, it was apparent that in some areas they had been robbed of much of their masonry during the later, middle Byzantine phase of occupation. Nevertheless, sufficient evidence has survived to indicate that they had a completely different layout from that of the middle Byzantine buildings. It is also likely that they served a different function.

As a result of the density of the Byzantine occupation, it has only been possible to penetrate to earlier levels in a few isolated places. Although a considerable amount of material has been recovered from these deeper soundings, little by way of comprehensible structures or overall layout could be found. For the present it is impossible to tell

Fig. 18 Trench XC, showing large drain or channel, looking west, behind the building (Context 480) that contained the destruction layer, Context 444/448. Photo by C. Lightfoot.

if this material, including the complete mold-made terracotta lamp described above, represents early Byzantine occupation of the sixth and early seventh centuries or belongs to layers containing residual deposits that date to the earlier dark ages in the second half of the seventh century.

Marble Fragments from the Bathhouse (by O. Karagiorgou)

During the 2003 season, work concentrated on processing and studying the marble finds from the 2000, 2001, and 2002 seasons, with emphasis on the marble found during the excavation of the bathhouse (the polygonal hall and Structure 1) in Trench XC.²⁸ The stones were first separated according to season and context, counted, and then described. Some of the pieces were inventoried (i.e., given “T” numbers), and others were entered into notebooks. So, for example, AM01/XC Context 118 produced thirty-three examples, of which six specimens were recorded as T1789, T1790, T1791, T1792, T1793, and T1691. The largest concentrations came from AM02/XC Contexts 311 and 325, and a considerable amount of time was spent trying to see how many of the fragments from these (or neighboring contexts) could be joined together. Out of the 481 fragments from these contexts it was possible to join 102 fragments, plus 3 more fragments that came from other contexts (AM01/XC Context 118/31, AM02/XC Context 215/6, and AM02/XC Context 234/16). So far twenty-four different slab types have been identified as materials used in the floor and wall revetment of the bathhouse.²⁹ Important pieces included T1746 (a curved slab fragment that originally flanked the stylobate of the polygonal hall), T1892 (a slab fragment that also preserves part of a brick, possibly the uppermost brick of a hypocaust pier), and T1890 and T1891 (two slabs that preserve holes for iron clamp fittings).³⁰ It is hoped that further study of the revetment slab fragments from Trench XC, and in particular from AM02/XC Contexts 311 and 325, in combination with (a) the study of the spacers that have been excavated during the past two seasons, (b) the marble preserved in situ in the bathhouse, and (c) the measurements of its floor and wall surfaces, may reveal more information on the interior decoration of this building.

²⁸ In addition, new marble finds were processed as they came into the dig house during the season. I would like to thank Dr. Johanna Witte-Orr for her assistance in this work.

²⁹ The work on the very large assemblage of material from Contexts 311

and 325 was not completed and so will be continued in a future season.

³⁰ For T1746, compare also T1662. The surface of T1892 is covered with a peculiar substance that looks as if it had melted onto it, but as yet no analysis has been carried out to identify it.

At present three general observations can be made regarding the marble finds from the 2000, 2001, and 2002 seasons. First, there is a significant group (36 fragments in total) that can be identified as tiles from opus sectile floor(s). They appear in various shapes; triangles are the most common, but there are also compressed hexagons, hexagons, octagons, squares, and roundels. Eight more such tiles were also discovered in 2003. Of special interest are T1833 and T1841, which are most probably marble slabs that were used in between opus sectile floor tiles or as borders to opus sectile floors. Detailed study of all these pieces may reveal the pattern(s) of the opus sectile floor(s), as well as (possibly) indicating the actual floor(s) that they originally decorated. Moreover, it should be possible to calculate the surface area that was covered by the surviving slabs. Second, although it has been assumed that most of the marble used at Amorium came from Docimeium (İscehisar), which lies only some 50 km to the southwest, this remains to be proven by direct comparison with samples from the modern quarries and by isotopic analysis of individual pieces.³¹ Third, among the finds studied this year there were also a number of fragments that are not from quarries in Asia Minor. Three main types of imported Greek marble were identified: verde antico (from Thessaly), green porphyry (from near Sparta), and cipollino (from Karystos on Euboea), whereas the alabaster fragments may be of Egyptian origin.³² These finds, although small in size and quantity, are of considerable importance for understanding the nature and complexity of the marble trade in early Byzantine times.³³

The Lower City Enclosure, Trench XB (by O. Koçyiğit)

The main thrust of the work in Trench XB in 2003 was to reveal more of the destruction layer that had been identified in the

³¹ See, for example, T. Drew-Bear, "Phrygia, Pisidia ve Lycaonia'da Epigrafik Yüzey Araştırmaları," 21. *ArSonTop* (Ankara, 2004), 1: 105. A thorough study of this neglected aspect of the marble material collected, not only from the bathhouse but also (in even larger quantities) from the Lower City church, awaits the initiation of a regional study around Amorium; for some misleading preliminary remarks, see C. S. Lightfoot, "Amorium 2004," *AnatArch* 10 (2004): 14 (above, n. 5). For more accurate comments, see C. S. Lightfoot, "Trade and Industry in Byzantine Anatolia—The Evidence from Amorium" (see above, p. 269).

³² Green porphyry: T1686–8, T1704, T1897, T1904, and T1919; compare E. Dolci and L. Nista, *Marmi Antichi da Collezione*.

La Raccolta Grassi del Museo Nazionale Romano (Carrara, 1992), 85, plate 159. Other fragments of verde antico had been noted in earlier seasons, most notably the pieces of a reliquary casket of the 5th–6th century (*AnatSt* 45 [1995]: 112). Recent research has concluded that the verde antico quarry was extensively exploited in the Roman period (2nd–3rd c.), the late antique period (mid-5th–mid-6th c.), and again (on a smaller scale) during the middle Byzantine period (9th–10th c.); see O. Karagiorgou, "καὶ Ἀτρακὸς ἐπὶ πόσα (μάρμαρα) λευρῶν χθῶν πεδίοις ἐλόχευσε . . .": The Quarry at Omorphochori near Larisa (Thessaly) and Its Contribution to Byzantine Art," in *Archaeological Evidence on Manufacturing Installations during the Byzantine Period (5th–15th c.)*, Proceedings of

the 22nd Symposium of Byzantine and Postbyzantine Archaeology and Art (Athens, 2004), 183–219 and 385–386 (in Greek with Greek and English summaries). A fragment (T853) of red porphyry from Egypt had also been recorded as a surface find in 1997; compare Dolci and Nista, *Marmi*, 81, plates 139–40. For early Byzantine chancel columns in porphyry used as spolia in the walls of Kütaḥya castle, see C. Foss, *Survey of Medieval Castles of Anatolia*, vol. 1, *Kütaḥya* (Oxford, 1985), 51, 59, fig. 82.

³³ Few examples of Greek imports have so far been recorded from sites in Asia Minor; see *Pietre e Marmi Antichi: Natura, Caratterizzazione, Origine, Storia d'Uso, Diffusione, Collezionismo*, ed. L. Lazzarini (Padua, 2004), 112, fig. 16, and 115, figs. 22–23.



Fig. 19 General view of Trench XB during excavation with the Enclosure wall at rear, looking south, with stone trough (T1741) in situ at center. Photo by C. Lightfoot.

previous season.³⁴ To this end the trench was extended eastwards following the inner face of the Enclosure wall and northward as far as the southeast corner of the bathhouse (figs. 19 and 20). The area thus exposed measures approximately 12 by 10 m. Close to the Enclosure wall a layer of collapse some 2 m deep was encountered, comprising mortar and rubble masonry from the wall itself. Several architectural fragments that had been reused in the construction of the Enclosure wall were recovered from the debris. Below this layer, running roughly parallel to the Enclosure wall, a well-built rubble wall (W109) was uncovered. It clearly belonged to a structure that predates the construction of the Enclosure wall. The northwest corner of this structure was identified, along with a second, shorter wall (W133), and an internal dividing wall (W131), both of which run up to and under the lower courses of the Enclosure wall. The latter are here stepped out beyond the face of the upper part of the wall and probably represent the wall foundations, which were thicker than the superstructure and mark the level of the contemporary ground

³⁴ The work in Trench XB was not included in the selection of material that featured in the report on the 2002 season (*DOP* 59 [2005]: 233). This was not a reflection of its lack of significance, but rather since the excavation in Trench XB was

ongoing, it seemed appropriate to devote space to other aspects of the work in 2002 that had reached more of a conclusion. For a brief mention of the operation and finds from Trench XB in 2002, see C. Lightfoot, "Amorium," *AnatArch* 8 (2002): 11.

Fig. 20 State plan of Trench XB after removal of stone trough (T1741). Drawing by O. Koçyiğit and U. Akabak.

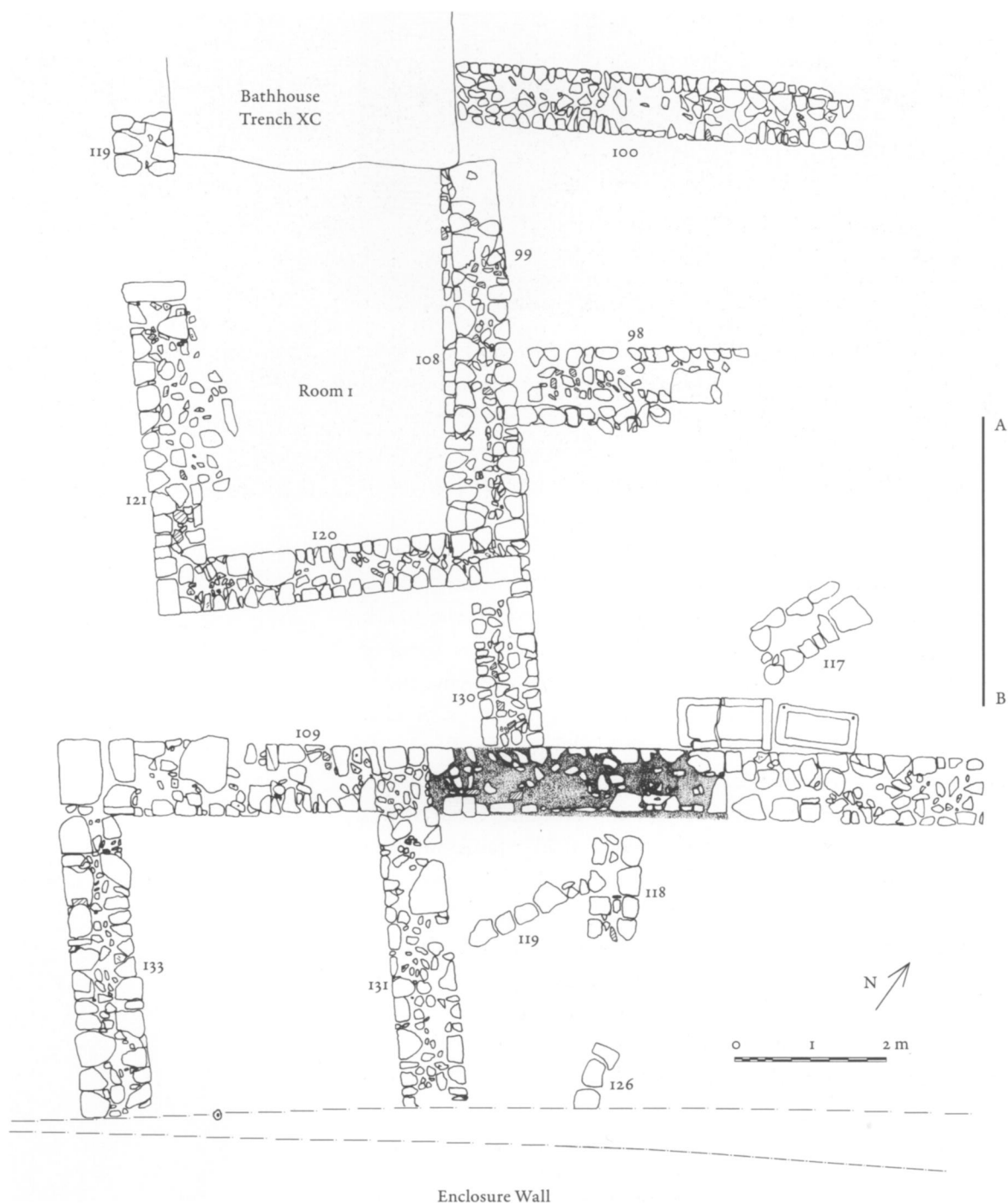




Fig. 21 Stone trough (T1741), decorated on one side with a six-petal rosette. Photo by C. Lightfoot.

opposite page

Fig. 22 View of section (A–B) of north-east baulk of Trench XB, showing ash layer and collapsed mud brick. Photo by C. Lightfoot.

Figs. 23–24 Copper alloy follis of Michael II (SF6412) found in Trench XB, Context 142—note the even, pitted surface of both the obverse and reverse. Photo by C. Lightfoot.

surface. The irregular way in which the massive foundations were constructed had initially led us to believe that the Enclosure wall “comprised two distinct phases.”³⁵ In fact it can now be seen that the Enclosure wall was probably all of one period; in places it has deep rubble foundations that have been cut down through earlier fills and minor walls, but elsewhere the lower courses of the wall were built directly over existing large buildings and features.

Wall 109 served to divide a row of rooms to the south from a larger space, possibly a work area or open courtyard, to the north. Arranged along the northern exterior face of the wall was a row of three stone troughs, one of which was carved out of a massive block of limestone decorated on one long side with a rosette design in relief (fig. 21).³⁶ It had been overturned and was found with its front side facing upward, but the other two plain troughs remained in situ. Associated with the walls (W109, W131, and W133) and troughs was a deep layer of ash, covering both the floors inside the rooms and the surface of the supposed courtyard (fig. 22). Four copper alloy coins were found at different spots in this destruction layer and, despite their corroded condition, it was possible to identify them all

35 C. S. Lightfoot and Y. Mergen, “1996 Yılı Amorium Kazısı,” 19. *KazSonTop*, 26–30 Mayıs 1997, Ankara (Ankara, 1998), 2: 350–51; *DOP* 52 (1998): 327. It was further noted that “the interior face of the first (lower) phase was clearly marked by scorch marks on the surfaces of the blocks in its uppermost row and by associated ash layers.” For the Carbon-14 dating of the ash from Trench XB Context 16, see *DOP* 53 (1999): 337. The ash layers may now be assigned

to the destruction layer disturbed by the construction of the Enclosure wall, but it remains uncertain what to make of the scorch marks that were observed in the 1996 excavations.

36 T1741 from Trench XB, Context 116; L. 1.56 m; W. 0.655 m; H. 0.82 m. This trough, which was found tipped over onto its side, was removed to the Dig House depot before the end of the season.



as copper alloy folles of Michael II (820–29) (figs. 23 and 24) and Theophilos (829–42).³⁷ Combined with the fact that a similar layer of ash and collapsed mud-brick was detected elsewhere in Trench XB in previous seasons, this evidence argues strongly for accepting the ash layer as part of a widespread rather than an isolated phenomenon. The coin evidence recovered in 2003 helps to date this burning and destruction to the second quarter of the ninth century. It may therefore be suggested that the destruction layer could be associated with a specific historical event, namely, the siege and sack of Amorium in 838. Another building (fig. 25) was exposed in the northwestern sector of the trench but of different orientation and date from those of the structures to the southeast. It comprised three rubble walls (W108, W120, and W121), and to its north it abutted the main south-east wall of the bathhouse.³⁸ Here, in contrast, no evidence for a



37 A follis of Michael II (820–29), class 3: AMo3/XB142/SF6142: 32.5–30 mm; 7.32 g; 6 h; three folles of Theophilos (829–42), class 1, dated 829–30/1: AMo3/XB124/SF5702: 27.5–26 mm; 7.74 g; 6 h; AMo3/XB132/SF5725: 32–31 mm; 6.29 g; 6 h; and

AMo3/XB132/SF5727: 31–29 mm; 8.25 g; 6 h.

38 This wall, designated Trench XC/Wo2, was first exposed in 1998 (*DOP* 55 [2001]: 382, figs. H and 13).

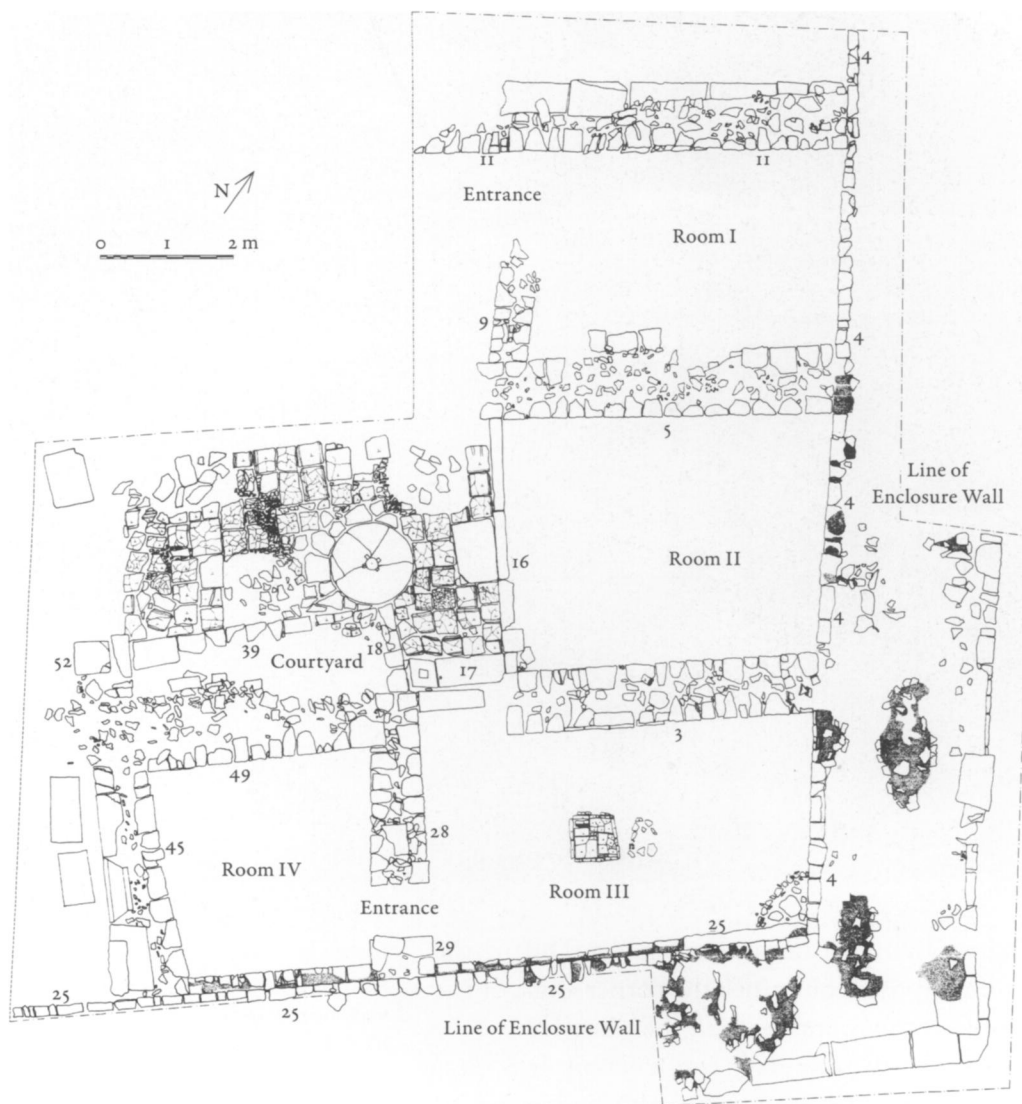


destruction layer was detected; instead, the finds indicated that the room was built in the tenth or eleventh century, using in part earlier walls (such as W99). Because of the sloping nature of the terrain, it seems likely that the ninth-century (and earlier) layers still remain buried in this sector.

Fig. 25 Trench XB, view of Room I with corner of bathhouse at rear, looking northwest. Photo by C. Lightfoot.

The Lower City Enclosure, Trench XM (by H. Yaman)

Whereas the excavations in Trenches XC and XB concentrated on the investigation of layers predating the construction of the Enclosure wall, a new trench was opened in the southeast corner of the Enclosure specifically with the intention of investigating the nature of this massive wall (figs. 3 and 26). Trench XM proved that no gateway or entrance into the Enclosure existed at the corner of the wall, and it also showed that the circuit of defenses was not strengthened here by a corner tower, either internal or projecting. It would therefore seem that, rather than serving as a fortification in a military sense with towers and parapet walk, the Enclosure wall must be viewed as a substantial barrier intended to mark one area of the Lower City off as a distinct, secure zone.



Parts of two stretches of the Enclosure wall were exposed to their full width. The outer face at the corner was built of conspicuously larger blocks, presumably to add weight and stability. It was also clear that both sections were constructed together using the same materials and technique. Although a considerable length of the southern stretch had already been excavated, little evidence had been found to connect any of the structures previously excavated inside the Enclosure with the construction or use of the Enclosure wall itself.³⁹ Indeed it has been shown that most, if not all, of the walls belong to earlier buildings and run under the Enclosure wall. It thus came as a surprise to find a series of rooms in Trench XM that was closely associated with the Enclosure wall, constructed in a similar way with a mortar and rubble core and facing blocks of

Fig. 26 State plan of Trench XM. Drawing by H. Yaman, S. Karakaya, and İ. Koçak.

³⁹ The southern wall had earlier been designated as W03 in Trench XD (DOP 57 [2003]: 288, fig. 13). Here it was given the context number Trench XM/W25, while the wall running northwest from the corner had not previously been excavated and so was designated as Trench XM/W04.

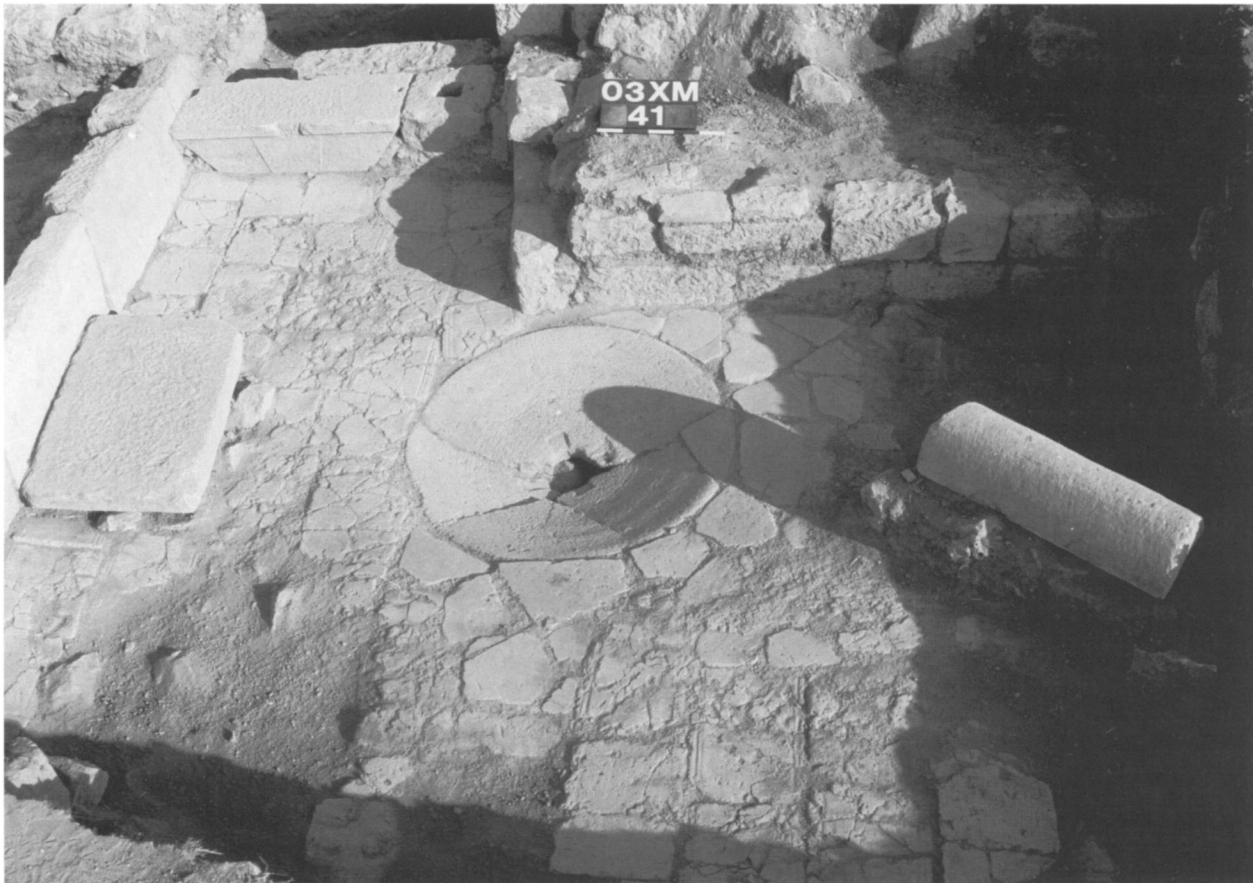


irregular sizes, including a number of pieces of spolia. During the season, four rooms were exposed, built into the corner angle of the Enclosure. The sidewalls of the rooms abutted the inner face of the Enclosure wall, indicating their secondary construction. It is clear, however, that the rooms were built as one unit, taking advantage of the angle provided by the corner of the Enclosure wall. The more sheltered corner room (Room III) was found to contain a raised tile hearth at its center, and Room IV could only be entered through Room III. These two rooms, then, by reason of their location and features may be interpreted as living quarters.

The other two rooms (Rooms I and II), which ranged along the northeast section of the Enclosure wall, on the other hand, may have served other purposes, and both opened directly onto the interior of the Enclosure. Room II was of particular interest, since it had no well-defined floor and no doorway. Instead a low parapet wall comprising spolia slabs, including a middle-Byzantine closure slab, T1908 (fig. 27), had been erected across the front of the room, and an impost block was placed next to the parapet as a step to climb into the room (fig. 28).⁴⁰ Room II may, therefore, have served as a storage area for grain and/or other supplies. The four rooms were

Fig. 27 Middle Byzantine closure slab (T1908) reused in the parapet to Room II in Trench XM.
Photo by C. Lightfoot.

40 At the northern end of the barrier was a limestone closure slab, decorated on the front with a cross with lobe-shaped arms: T1908 from Trench XM, Context 16; L. 1.365 m; H. (as visible, still partially buried in brick floor at front) 0.56 m; Th. 0.17 m.



apparently arranged around an area of tiled pavement that probably constituted part of a courtyard. In addition to recycled bricks, the pavement was found to contain a complete, if broken, circular grinding stone; on its southeast side, backing onto Room IV, a low stone bench-like feature was also identified, and a second impost block formed part of the threshold that led into Room III to its left (fig. 28). A large column-shaft fragment was also excavated lying in the earth fill above the brick floor in the courtyard. Its relationship to the buildings remains unclear but the layer of earth below it implies the lapse of some considerable time before it was deposited here.⁴¹

Apart from the spolia used in the construction of the rooms and courtyard, Trench XM produced relatively few finds, although a long iron javelin point, SF6172, was found next to the Enclosure wall in Room III. In addition, at least two of the rubble masonry blocks used in the walls of the rooms retained traces of fresco from their primary use elsewhere. The best-preserved example was found in Room IV and, although the fragment was small and its design somewhat indistinct, it clearly had at least two painted layers. This evidence, together with the fact that the spolia included not only late antique/early Byzantine architectural elements but also middle

Fig. 28 Trench XM, general view of paved courtyard area, looking southeast. Photo by C. Lightfoot.

⁴¹ The possibility that it merely represents part of the stone-robbing activities of the villagers during the 20th century cannot be discounted.

Byzantine material (fig. 27), suggests that the construction of the rooms must be placed late in the sequence of Byzantine occupation. Likewise only three coins were recovered from Trench XM, two of which were folles of Constantine VII Porphyrogenitos (913–59).⁴² On the other hand, no evidence was found to suggest that later Turkish occupants (Seljuk, Ottoman, or modern) of the site made any use of the area at all beyond robbing stone from the exposed outer corner of the Enclosure wall.

The Textiles from the Narthex Tombs in the Lower City Church (by P. Linscheid)

During the excavations in 1998 and 2002 nine tombs, which can be dated to the tenth or eleventh century, were uncovered in the narthex of the Lower City Church.⁴³ Two of the tombs (nos. 4 and 6) were found to contain textile fragments in a good state of preservation.⁴⁴ During the 2003 excavation season, the textiles from the two tombs were studied and, although the material is extremely fragile and fragmentary, it was possible to make some important, if preliminary, observations.

Tomb 6 contained four articulated individuals, burials 1–4, laid in an overlapping fashion one on top of the other in a sealed stone sarcophagus. Most of the textiles retrieved belonged to burial 1, which was the last body to be put into the grave. A cord, of an (as yet) undetermined fiber material consisting of a tubular braid in oblique interlacing, ran twice around the body and was tied together with two overhand knots at approximately knee level. The cord was wound around burial wrappings that covered at least the lower part of burial 1, including the shoes. The function of this textile is not absolutely certain, but considering the fact that it was secured by a cord, it more likely served as a shroud rather than as a garment. The fabric consisted of extremely fine threads, probably of silk, used in pairs. In one of the two thread systems, the fine double threads alternate with thicker single threads of unspun fibers. The weave is a balanced open tabby. The cloth was decorated with small rosettes of about 1 cm in diameter, placed in a netlike arrangement presumably

⁴² They have both been identified as belonging to class 5, dated 945–ca. 950: AMo3/XM10/SF5692: 28–25.5 mm; 7.66 g; 6 h (?); and AMo3/XM43/SF5872: 28–25.5 mm; 7.74 g; 6 h. The remaining coin was an anonymous follis of class G (ca. 1065–70): AMo3/XM31/SF5750: 28–26 mm; 5.59 g; 6 h.

⁴³ For a detailed preliminary report on the tombs, see *DOP* 55 (2001): 374–79, figs.

B–F, 7–10, and *DOP* 59 (2005): 243–52, figs.

11–20. For the human remains, see J. A. Roberts, “Remains from the Lower City Church, Narthex Tomb, 1998,” in *Amorium Reports* 2, 169–71 (above, n. 6), and *DOP* 59 (2005): 254–56.

⁴⁴ The organic material, including the textiles, was recovered and partly consolidated by Lisa Usman (formerly of the AHRB Centre for the Evolutionary Analysis

of Cultural Behaviour, Institute of Archaeology, University College, London). For a preliminary report on the material from Tomb 6, see L. Usman, “Excavation, Conservation and Analysis of Organic Material from a Tomb in the Narthex of the Lower City Church,” in *Amorium Reports* 2, 193–201.

all over the cloth. These rosettes are made from the thicker threads in one of the thread systems of the ground weave and from additional threads of the same material. The technique employed is not yet fully understood, but it may well be a nonwoven one. Further decoration was achieved by floats of the thicker threads, as small portions are extending unbound in some areas of the cloth.

In addition, fourteen textile roundels with a diameter of 3–5 cm have been preserved from burial 1. The roundels were once placed on a similar fine cloth and were made by means of a technique similar to that used on the rosettes. It is not yet clear whether these roundels were originally part of the rosette-decorated textile or belonged to a second fine fabric that covered burial 1, since only minute traces of the ground weave surrounding the roundels have survived. According to the find-spots on the body, the roundels were arranged on the cloth in a vertical line down the length of the body and a horizontal line at knee height. Some roundels reveal that they are composed of a central field enclosed by a circular frame; the central field depicts an (as yet) unidentified figure. Presumably this pattern was originally visible in different colors that cannot now be made out, since the chemical conditions in the sarcophagus have turned all the textile dyes into a dark brown color.

Smaller fragments of at least two further textiles are preserved from burial 1; one is a faced tabby weave decorated with brocading, and the other is a balanced tabby. As well as wearing shoes, the body in burial 1 was presumably clothed in other garments, and therefore these two textiles may have belonged to items of clothing. Further research in 2004 will be carried out on the skin fragments with adhering layers of different textiles in the expectation that this will reveal the order and eventually the function of the single textile items.

Tomb 4 contained two burials, those of a middle-aged man and woman, laid side by side. Most of the textiles are in a very decomposed state and so not much information could be retrieved from them in 2003. The legs of the deceased were covered with a light textile in open tabby weave. Further textiles survive from the chest area, from behind the head, and from the hand; they consist of at least two different fabrics in tabby weave.

In a better state of preservation are some small fragments of textile decorated with metal thread, apparently made of gold. The largest fragment, 8 by 1.5 cm, is patterned with a dark-colored scroll against a golden background, each scroll enclosing an arrow-shaped leaf. The gold thread consists of a flat gold ribbon wound as a spiral around a fiber core. The gold threads were applied to the dense tabby-woven ground fabric by sewing with a very fine sewing thread,

whereas the scroll and leaves were embroidered with a dark thread. The gold thread runs continuously and turns back at the areas of embroidery; thus appliqué and embroidery do not overlap each other but fit together like a mosaic.

This longitudinal fragment consists of two pieces whose undecorated reverse sides were sewn back to back; the front sides show the same pattern but turned upside down. Only one selvege is preserved along one long side of one of the two joined pieces, while all the other edges are torn out. It is difficult, therefore, to ascertain the original position of the gold decoration on the object and the function of the object itself. This part of the object with the two-faced decoration was obviously meant to be used and seen from both sides; the upside-down directions of the pattern on the two sides of the fabric suggest a folding back. The crude stitches joining the two pieces of the longitudinal fragment are in marked contrast with the extraordinarily fine appliqué work and raise the question of whether the gold-decorated parts of another textile were reused here.

Five other tiny fragments with gold thread appliqué are preserved. From the technical features observed so far, these fragments might well originate from the same object as did the fragment depicting the scroll. At least two of these minute pieces are decorated on both sides of the cloth as well. Two of the fragments reveal traces of a pattern that is different from the scroll, suggesting that the scroll pattern might have belonged to a larger design of gold appliqué decoration.

More work is required to complete the study and recording of the finds, including the badly decomposed material that was given less attention in 2003. Emphasis will also be given to the analysis of the fibers, gold thread, and dyes. We hope that it will be possible to reconstruct the original appearance of the wrappings from burial 1 in tomb 6. This is clearly a very rare find in itself, regardless of the costly nature of the material and the decoration. Efforts will also be made to identify at least part of the clothing of the deceased.⁴⁵

Detailed study of the various textiles from tomb 4 may reveal more precisely the furnishings of that burial, which may in turn allow for an interesting comparison of the burial practices adopted in tombs 6 and 4. Further attention to the fragments with gold thread appliqué from tomb 4 is needed to determine their possible function in primary and secondary use. The study of the textiles from tombs 6 and 4, and their comparison with other contemporary material, will contribute substantially to a better understanding of the status and wealth of the deceased, who must have been not only important patrons of the Lower City Church but also influential figures in the local community.⁴⁶

⁴⁵ Very few ancient shrouds have been excavated. For remnants of one found in a Roman lead sarcophagus, dated to ca. 240, uncovered in Jerusalem in 1956, see L. Y. Rahmani, *A Catalogue of Roman and Byzantine Lead Coffins from Israel* (Jerusalem, 1999), 101.

⁴⁶ See *DOP* 59 (2005): 251.



Conservation Work in the Lower City Church (by J. F. C. Foley)

The church is viewed as a single entity, in which the walls, floor, synthronon, ambo, tombs, and attached wall plaster will in due course be brought to a unified state of stability. The period of essential work is forecast to last five years; 2002 was the first year of this plan.

The Phase I walls and synthronon are in a condition that requires greater and more immediate attention, but all the walls are under observation and are receiving treatment where appropriate (figs. 29 and 30). The wall plaster fragments, including the wall painting, reflect in their present state the damage inflicted by environmental conditions. The wall plaster fragments, decorative or otherwise, that remain attached to the structure are receiving attention simultaneously with the substrate.

In 2003 a thorough survey was carried out of the condition of stone and wall plaster that had received treatment in 2002 and in previous seasons. A separate survey of stone that needs to be removed, primarily for the good of the structure and secondly for aesthetic reasons, was also carried out. During the survey, blocks that are in poor shape but can be treated were examined, and decisions on their treatment were made. Some 150 separate preventive and remedial

Fig. 29 The apse and synthronon of the Lower City Church, after stabilization and consolidation in 2003, looking east. Photo by C. Lightfoot.



conservation treatment requirements were noted for the fabric of the church on both exterior and interior walls, piers and buttresses, and on the synthronon. It was also noted that the church contains many different kinds of limestone. The dense hard stone was seen to have many more fractures than did the softer limestone, which displays surface spalling and fracture but no loss of internal material and collapse. The brown-colored limestone, containing “tubes” of calcite, which formed over time under pressure around plant fibers, has high porosity due to its open network of calcium tubes, but the matrix is very strong and cohesive. These blocks show almost no evidence of decay.

The mortar and limewater treatments used in 2002 throughout the church and in the wall painting niche on the south wall have been effective. The mortar is holding well. The trench dug in 2002 in front of the wall painting has been reasonably effective. However, salt efflorescence was again apparent in the lower regions of the fresco surface and on the stone beneath.

Sympathetic, natural materials continue to be the basis for all treatment to the structure and wall plasters, with synthetic help

Fig. 30 Mortar repairs being carried out at the west end of the north aisle of the Lower City Church, looking southwest. Photo by C. Lightfoot.

where required. During the season the treatments were concentrated in the north aisle and adjacent areas, as well as in the apse and synthronon, but treatments were carried out in other parts of the church as deemed necessary. The types of treatment follow:

Biological Growth

1. All plant material was mechanically removed from the capping (earth, tile, and mortar) on the piers, buttresses, and outer walls.
2. Plant growth that was coming through the floor protection from the earth under or between the floor remnants was pulled out by the roots. Care was taken to remove seeds during this process.
3. Ethanol was applied neat, by brush and dropper, to the lichen growth on the stone surface on the exterior of wall 1 (north face). This resulted in a color change in the lichen within 24 hours. Long-term effects will be monitored.

Mortar Repairs

1. Lime mortar was mixed and toned with earth pigments and/or sieved soil to match as far as possible with the stone where the repair was being applied. The repairs fill gaps in surface material and provide strength to fragile surface stone with internal decay in progress. The mortar contained ingredients that provide water resistance whilst allowing free movement of water vapor. The repairs were carried out in stages where the depth of mortar required was large. In this case the mortar was built up in layers with rough mortar first containing small pre-soaked stones and fragments of brick. The finish layer was applied the next day.
2. Lime mortar applications of fine grade ingredients were mixed to grout the finest edges or areas of missing material in the region of lines of fracture. This mortar was also used to bind the edges of wall plaster fragments where they were detaching (re-adhering the fragments to the surface).
3. Lime-based grouts were mixed in varying consistencies depending on the depth of void to be filled. All the grouts contained a plasticizer (Primal WS24). Some grouts had considerably more aggregate than others to fill the larger voids. Once a void was located in a stone or behind a wall plaster fragment, entry holes were made in the top edge or in the case of surface laminations grout was applied to the edges. Open edges of laminating pieces of surface or wall plaster fragments were filled with a mix of mortar of suitable grade for the size of the gaps. One hole was always made for air to pass out. The grouts were introduced via syringe and needle, or syringe and rubber tube or aspirating bowl and rubber tube of varying grades to facilitate the free movement of whichever thickness of slurry was being

introduced. Once the grouts had filled the voids and had cured, the holes were sealed with fine mortar.

4. Shelter-coats were applied to four blocks only. They were lime-based, mixed in a slurry with small aggregates and earth pigments to protect the surfaces of those stones and act as protective layers. In this way a total of 196 blocks received mortar, mortar fills and lime grout, and shelter-coat treatments during the 2003 season. Thirty coats of limewater were sprayed onto the inner perimeter of the outer wall during the season. This is sufficient to strengthen the pores of the stone, as the calcium in the water will re-carbonate in the pores of the stone. Workmen also carried out pointing on several wall faces.

5. Stones that had been marked for replacement in the survey and could be cleared easily during the conservation treatment of other stones were removed and replaced. In addition, four sections of wall received stone to replace missing blocks. In total 97 stones were added and mortared in. Most were small upper-course wall stones or those that fitted into the top of piers. Only two major blocks were replaced.

6. Of the stones installed many were associated with areas of collapse. Reconstruction was deemed necessary in three areas of wall 7 and wall 26.⁴⁷ One of these was the area of the window in the east bay of the north aisle of the church.

The Wall Painting in the West Bay of the South Aisle

The crystallized salts on the surface of the fresco were removed mechanically with blunt scalpel blades and by paper and water poultice. The salts beneath on the stone surface were also removed by these methods. The dark area on the proper left side of the painting where the surface was flaking was consolidated with Paraloid B72 in acetone at three percent. Two two-meter deep by one-meter wide trenches were dug at the rear of the south wall behind the fresco and filled with dry stone rubble. The top was covered with geo-textile and pumice. This was done as a preventive measure to reduce salt penetration from behind by increasing drainage and removing the soil that carries salts and moisture.⁴⁸

Concluding Remarks

The latest five-year plan of work at Amorium, concentrating on the Lower City Enclosure, has undoubtedly proved the correctness of the general principle that there is no real substitute for excavation. For example, the nature of the embankment enclosing this central area of the site has now been clearly established to be a massive circuit wall, dating to the late tenth or early eleventh century. Although it could not have formed part of the city's main defenses,

⁴⁷ For the location of these walls, see *Amorium Reports* 2, 127, fig. VIII/1 (above, n. 6).

⁴⁸ It should also be mentioned that a calcium-carbonate-eating insect from the family *Ixodidea* was identified on the walls of the church in 2003. It is a type of parasite that is carried by birds. Thanks go to Sedat Oktay for this information.

which only existed on the Upper City mound at that time, it must have been built at considerable expense to isolate that part of the Lower City and to protect whatever lay within. The installations inside the Enclosure wall were therefore also valuable and important; they must surely have served a military and strategic purpose as yet unknown. Likewise, once excavated, the bath complex could be identified on plans produced by the geophysical surveys conducted in 1997.⁴⁹ The shape and size of the polygonal hall in particular are shown there in some detail. However, it would not have been possible without excavation to ascertain the complex's function or date. More generally, too, our knowledge of the history of the site between the sixth and eleventh centuries has been greatly enhanced by the detailed and systematic investigation of the various layers of occupation, with the changing pattern of use and layout that they have revealed. Admittedly the results have also posed a number of new questions, and all the problems concerning the interpretation of the complex stratigraphy or of individual finds may not be fully resolved in the final analysis. Nevertheless, the excavations have provided an overall impression that is firmly based on the archaeological data.

The results may be summarized as follows. Firstly, the most striking evidence for the early Byzantine period (sixth century) is the construction of a new, freestanding bath complex. Secondly, during the dark ages (seventh–early ninth century), the continued use of the rectangular bathhouse and the construction of numerous new buildings, including other large rectangular structures (such as Structure 2 in Trenches XC and XD) to the south of the bathhouse, attest to a density of occupation and intensity of use that confirm the size and importance of Amorium during that period. Thirdly, the identification of substantial destruction layers at various points in the Enclosure supports the view that a major catastrophic event affected the city. The fact that these layers are sporadic does not detract from the argument, supported by the numismatic evidence, that this event could be associated with the Arab sack of Amorium in 838. It is also clear that certain areas were subsequently abandoned, leaving earth to accumulate over the collapsed buildings. This seems particularly true of structures made of mud-brick and timber. On the other hand, the larger stone-built structures survived the catastrophe, and were put to new use in the middle Byzantine period (tenth–eleventh centuries). At the same time, a major alteration in the layout of the entire area was brought about by the construction of the Enclosure wall in the late tenth or early eleventh century. Finally, the abandonment of the Enclosure area appears to have taken place during the last quarter of the eleventh century, and was lasting; no further occupation or use of the area took place until modern times.

49 *DOP* 53 (1999): 334–37, figs. A–F.

In addition, the excavations allow for a number of general observations. Firstly, there is abundant evidence for the recycling of buildings and materials throughout the Byzantine period, but there is also little to suggest that use of the Enclosure area declined significantly. Likewise, although the abandonment of the use of the bathhouse may mark a diminution of the area's status, there is nothing to indicate that it turned into an area of sparse, squatter-like occupation after the mid-ninth century. Various economic and commercial activities seem to have been carried out there, as attested by both the coin finds and features such as ash pits, slag deposits, etc. Indeed, what appears to have been an area of residential buildings (for example, in Trench XC East) before 838 may have become more heavily industrialized during the middle-Byzantine period.

Secondly, lack of significant accumulations of earth between the main occupation layers and the complex nature of the vertical stratigraphy make precise identification and interpretation difficult. As a result two fundamental questions still remain to be resolved. One concerns a possible break in occupation at Amorium immediately after the sack in 838, suggested by the destruction layers and abandonment of certain buildings. The evidence, however, is inconclusive since, as elsewhere (for example, at the Lower City Church), reoccupied areas were cleaned out, and earlier structures were either reused or demolished for their materials. Coins may provide the best indication of a break in occupation, since there is a marked decline in the number of ninth-century issues after Theophilos' reign. The coin finds only increase significantly after ca. 950, perhaps indicating when the Enclosure area was resettled.⁵⁰ Thirdly, there is the problem of identifying the late Roman and early Byzantine occupation levels that are largely concealed below the later strata. As a result it has been difficult as yet to place the bath complex in its original context and to explain the circumstances of the abandonment of the polygonal hall. It would be most interesting to discover whether this marks a significant change in occupation not only of the Enclosure area but also of the whole site. At present there is insufficient data to resolve the question of whether Amorium suffered a major decline in the late sixth or early seventh century, following the pattern that seems to be the case for most cities in Asia Minor at that time. Only further excavation will tell if such questions can be answered.

50 From the various trenches within the Enclosure area some 108 coins have been recovered since 1996. However, for the second half of the 9th and first half of the 10th centuries only 6 coins have been identified: a copper alloy follis of Leo VI (886–

912): AMo3/XC446/SF5638; a follis of Romanos I (920–44): AMo3/XB145/SF6014; and four folles of Constantine VII (913–59): AMo2/XC304/SF4350, AMo3/XC508/SF5647, AMo3/XM43/SF5872, and AMo3/XM10/SF5692.

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